

Amendments to the Claims:

This following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A method for forwarding a packet upstream from a subscriber unit to a central access point, the packet including destination information and source information, the method comprising:

determining a first value associated with the packet, the first value being one of a predetermined set of limited values, wherein the first value is determined using the destination information and the source information;

identifying a first service flow that is suitable for use to forward the packet, the first service flow being one of a set of service flows between the source and the destination, wherein the first service flow is identified using the first value associated with the packet; and

sending the packet on the first service flow.

Claim 2 (original): The method of claim 1 wherein determining the first value associated with the packet includes:

applying a hash function to the destination information and the source information; and
generating the first value using the hash function, wherein the first value is a hash value.

Claim 3 (original): The method of claim 2 wherein the first value is associated substantially only with the first service flow, and wherein substantially any packet which is associated with the first value is sent through the first service flow.

Claim 4 (original): The method of claim 1 further including:
assigning the first value to the first service flow.

Claim 5 (original): The method of claim 1 wherein the destination information is a destination Internet Protocol (IP) address and the source information is a source IP address.

Claim 6 (currently amended): The method of claim 1 wherein the central access point is a headend,

Claim 7 (original): The method of claim 6 wherein the subscriber unit and the headend are associated with a Data Over Cable Service Interface Specifications (DOCSIS) protocol.

Claim 8 (original): The method of claim 1 wherein the subscriber unit is a cable modem and the central access point is a cable modem terminating system, and wherein the cable modem and the cable modem terminating system are associated with a DOCSIS protocol.

Claim 9 (original): The method of claim 1 wherein the set of service flows includes up to approximately sixteen service flows.

Claim 10 (original): The method of claim 1 wherein the packet is part of a session, the session including multiple packets, wherein each packet of the multiple packets is associated with the first value and is sent on the first service flow.

Claim 11 (currently amended): A method for forwarding packets associated with a session upstream from a subscriber unit to a central access point, the method comprising:

identifying a number (N) of available service flows between the subscriber unit and the central access point;

sending a first packet of the session from the subscriber unit to the central access point on a first service flow included in the N available service flows;

sending an (N-1)th packet of the session from the subscriber unit to the central access point on an (N-1)th service flow included in the N available service flows;

sending an Nth packet of the session from the subscriber unit to the central access point on an Nth service flow included in the N available service flows; and

sending a second packet of the session from the subscriber unit to the central access point on a second service flow included in the N available service flows, wherein the second packet is substantially in sequence behind the first packet and before the (N-1)th packet and Nth packet.

Claim 12 (canceled)

Claim 13 (currently amended): The method of claim 11 further including:

sending an (M*N+1)th packet of the session from the subscriber unit to the central access point on the first service flow, wherein M is a positive integer; and

sending an (M*N)th packet of the session from the subscriber unit to the central access point on the Nth service flow.

Claim 14 (original): The method of claim 11 wherein the central access point is a headend.

Claim 15 (original): The method of claim 14 wherein the subscriber unit and the headend are associated with a DOCSIS protocol.

Claim 16 (original): The method of claim 11 wherein the subscriber unit is a cable modem and the central access point is a cable modem terminating system, and wherein the cable modem and the cable modem terminating system are associated with a DOCSIS protocol.

Claim 17 (currently amended): A device for forwarding a packet upstream to a central access point, the packet including destination information and source information, the device comprising:

- means for causing a first value associated with the packet to be determined, the first value being one of a predetermined set of limited values, wherein the means for causing the first value to be determined include means for causing the destination information and the source information to be used;

- means for causing a first service flow that is suitable for use to forward the packet to be identified, the first service flow being one of a set of service flows between the source and the central access point, wherein the means for causing the first service flow to be identified include means for causing first service flow to be identified using the first value associated with the packet; and

- means for causing the packet to be sent on the first service flow.

Claim 18 (original): The device of claim 17 wherein the means for causing the first value associated with the packet to be determined include:

- means for causing a hash function to be applied to the destination information and the source information; and

- means for causing the first value to be generated using the hash function, wherein the first value is a hash value.

Claim 19 (original): The device of claim 18 wherein the first service flow is associated with the first value, wherein substantially any packet which is associated with the first value is sent through the first service flow.

Claim 20 (original): The device of claim 17 wherein the device is one of a subscriber unit that supports a DOCSIS protocol and a cable modem that supports the DOCSIS protocol.

Claim 21 (original): The device of claim 17 wherein the device is one of a subscriber unit and a cable modem.

Claim 22 (currently amended): A device for forwarding packets associated with a session upstream to a central access point, the device comprising:

means for causing a number (N) of available service flows to the central access point to be identified;

means for causing a first packet of the session to be sent to the central access point on a first service flow included in the N available service flows;

means for causing an (N-1)th packet of the session to be sent to the central access point on an (N-1)th service flow;

means for causing an Nth packet of the session to be sent to the central access point on an Nth service flow included in the N available service flows;

means for causing a second packet of the session to be sent to the central access point on a second service flow, wherein the second packet is substantially in sequence behind the first packet and before the (N-1)th packet and Nth packet.

Claim 23 (canceled)

Claim 24 (currently amended): The device of claim 22 further including:

means for causing a an (M*N+1)th packet of the session to be sent to the central access point on the first service flow, wherein M is a positive integer; and

means for causing sending an (M*N)th packet of the session to be sent to the central access point on the Nth service flow.

Claim 25 (original): The device of claim 22 wherein the device is one of a subscriber unit that supports a DOCSIS protocol and a cable modem that supports the DOCSIS protocol.

Claim 26 (original): The device of claim 22 wherein the device is one of a subscriber unit and a cable modem.

Claim 27 (currently amended): A device for forwarding packets to a central access point through a number of available service flows, the device comprising:

- a routing component;

- a hashing component, the hashing component being arranged to apply a hash function to information associated with a first packet to determine a value, wherein the routing component is arranged to provide the information associated with the first packet to the hashing component and the potential number of determined values at least equal to the number of available service flows; and

- a first service flow identifier, the first service flow identifier being associated with the value, wherein the hashing component ~~provides~~ associates the first packet ~~to~~ with the first service flow identifier.

Claim 28 (original): The device of claim 27 wherein the service flow identifier is arranged to cause the packet to be forwarded on a service flow associated with the service flow identifier.

Claim 29 (original): The device of claim 27 further including a second service flow identifier, wherein the second service flow identifier is associated with a different value and the hashing component is arranged to select the first service flow identifier using the value.

Claim 30 (original): The device of claim 27 wherein the information includes destination information and source information associated with the packet.

Claim 31 (original): The device of claim 27 wherein the device is one of a subscriber unit and a cable modem.

Claim 32 (previously presented): A device for forwarding packets to a central access point, the device comprising:

- a receiving component, the receiving component being arranged to receive a plurality of packets that are to be forwarded to a central access point by a DOCSIS protocol;

a plurality of service flow identifiers which are associated with a plurality of service flows of said DOCSIS protocol; and

a routing component, the routing component being arranged to receive the plurality of packets from the receiving component; the routing component further being arranged to provide a plurality of packets to the plurality of service flow identifiers of said DOCSIS protocol on a substantially round-robin basis.

Claim 33 (original): The device of claim 32 wherein the routing component is further arranged to provide a first packet of the plurality of packets to a first service flow identifier of the plurality of service flow identifiers and to provide an Nth packet of the plurality of packets to an Nth service flow identifier of the plurality of service flow identifiers.

Claim 34 (original): The device of claim 33 wherein the plurality of packets includes a second packet, the second packet being received by the receiving component between the first packet and the Nth packet, and wherein the routing component is further arranged not to provide the second packet to either the first service flow identifier or the Nth service flow identifier.

Claim 35 (original): The device of claim 33 wherein the plurality of packets includes an (N+1)th packet and an (N+N)th packet, wherein the routing component is further arranged to provide the (N+1)th packet to the first service flow identifier and the (N+N)th packet to the Nth service flow identifier.

Claim 36 (original): The device of claim 32 wherein the device is one of a subscriber unit and a cable modem.